

## THE MINES OF ARIZONA

This department is under the direction of Mr. W. E. Defty, the well known mining engineer, who will carefully scrutinize all matters relating to mining in order that only reliable information regarding legitimate enterprises shall find a place here.

The Republican will be pleased to receive information from any part of the state regarding the development of the mining industry. All communications should be addressed: Mining Department, Arizona Republican.

### What Abraham Lincoln Said

This great statesman said many wise things and he also made many predictions that came true. We came across a statement of his concerning mining which we have not seen previously quoted. The statement is a very wise one and coupled with great foresight for it has come true in every particular. Here is the statement as follows:

"The American mines will prove that we are the treasury of the world."

The above quotation is almost identical with that of the great traveler Humboldt, which he made in reference to Mexico.

Jones—What's the Oh Joy silver mine stock selling for now?

Broker—We just sold the last ten rolls of it for wall paper.

### Some Volume of Rock

The volume of the rocky crust of the earth, estimated as 10 miles thick, including the mean elevation of the land above the sea, is 1,633,000,000 cubic miles.

### Verde Smoke Stack

The large smoke stack at the new smelter at Clarkdale of the United Verde Co. is 400 feet high and the tallest in the world without braces. It is expected that its height will prevent but a slight emission of the fumes from its top and what does escape will not effect to any appreciable extent the vegetation along the valley. At that great height, what fumes do escape will receive a wide distribution by the air currents. What with peculiarly constructive dust chambers, buffers and such houses the smoke nuisance from the big smelters are reduced to a minimum. Some day every particle will be utilized for some beneficial purpose.

### Copper Giant

This property near Jerome as previously stated is now in the hands of the Verde Company. The property is a very valuable one with large ore bodies in sight and probably will be a large producer when the new smelter gets into commission.

### Monica

This property near Kirkland is again receiving attention by development. The property is an old one and has changed hands many times. A mill was erected upon the property some years ago but for some reason or other was unable to keep in continued operation. It is claimed there is a wide mineralization.

### Alvarado

It is reported that this property near Congress Junction is about to start up again. The ore bodies are developed and blocked out to a depth of 1100 feet. The mine also has a complete equipment including a 20-stamp mill and all accessories. We hope the mine will take on activity, as it has been a long time idle and it would mean much to that district which has been rather dull for some time.

### Gold Roads

This company near Kingman shipped a bar of bullion last week valued at \$20,000. Several bars of equal value are shipped to the mint each month.

### Cochise

There is a reported strike of rich gold ore close to the famous Cochise stronghold. The find is on what is known as the Grant claims, owned by Charles Grant, who has been doing work upon the claims for some years. Silver and zinc ores were known in the district for a number of years.

### Asbestos

The asbestos deposits 25 miles north of Globe are being developed by the Arizona Asbestos association. Some of the material is of fine silky fibre and of excellent quality and comes very near if not quite up to the standard of that found in the Grand Canyon, which the United Geological Survey says is the finest quality found in the United States. The deposits near Globe are in a rough country and for some miles the material has to be packed on burros.

### Santa Cruz

The World's Fair Mine near Patagonia and formerly owned by Frank Powers, is undergoing steady development and continues to be the largest shipper of the district. At present about 30 tons per day is shipped to the smelters. The ore contains silver, lead and copper and will average in the neighborhood of \$200 per ton. The property has always been a producer of wonderful rich ores, but has never been worked very energetically. The former owner used to take out a car load of ore and probably wouldn't take out another until his bank account required replenishing.

### Some Tunnel

It is reported that a movement is afoot for driving of a transportation

and drainage tunnel in the Bradshaw mountains. The tunnel as outlined would have its portal at Switchback No. 9 on the Bradshaw mountain railroad. It is presumed the work would tap many veins, amongst them being the Lincoln, Nelson, War Eagle and Crown King, all old properties and producers. The tunnel would have a length of approximately 6,000 feet and the veins would be tapped at a depth of 4,000 feet and over. The drainage of the ground and cheaper transportation of it is claimed would justify the expenditure of doing the work. The formation penetrated would be mainly Yavapai schist.

### THE LATEST ON MANGANESE

Ferro-Manganese Higher. One consumer offers \$120 Seaboard For Quick Delivery

Pittsburg—The seriousness of the ferro-manganese situation in this country is being rendered more acute by the destruction of merchant vessels in foreign waters. Aside from the apparent difficulty in lifting the English embargo, Oceanic shipping is rapidly becoming more dangerous. According to an unofficial report here \$120 seaboard has been offered by a consumer of ferro-manganese, apparently in need of prompt material.

### Mineral Gas

A reader of "Through the Meshes" sent that readable little print an interesting account of the first use of gas for fuel.

"Probably the earliest users of gaseous fuel," he writes, "were the first woodchoppers on the shores of the Canadian Sea, where from time immemorial, gas has been escaping from the oil belt of that region, only to be put to use on a large scale in modern times. But the first efforts to evolve gas from coal should be credited to Murdoch of Bedwith, Cornwall England, who about 1789 amused himself and astonished his neighbors by riding about in a little carriage, which at night was lighted by means of bladders filled with coal gas."

In 1865 the use of coal gas became general in the Manchester factories, England, and in 1867, was introduced in London, although characterized by Napoleon as "a grand folly," and Sir Walter Scott, "fearful London" would be set on fire by it from Hackney Gate to Tyburn.

The first record we have of the use of gas in the United States is in 1796, when Michael Ambrose and company, (Italian Fire Brokers) had an amphitheatre for exhibitions on Arch street between Eighth and Ninth, in Philadelphia.

In 1892, L. C. Hendry made a proposition to councils to light Philadelphia by gas lights burned in high towers.

In 1816, Dr. Charles Kugler of the same city exhibited at Charles' Museum, in the state house, "gas lights, lamps burning without wick or oil." These lighting took place in April and was so satisfactory that Warner and Wood of the new theatre introduced the gas nights at the fall season of the same year.

William Henry, coppersmith and tin smith, constructed the apparatus for the use of the gas at the museum and theatre and was so well satisfied with the result of his work that he put up a gas apparatus in his own house 200

Lombard street, near Seventh, and invited councils to witness the effect. This was the first private dwelling illuminated by gas in the United States. Peck continued to light his museum until the spring of 1818. His machinery was in a small closet under the steps in the great hall leading to the upper floors of the State House building. Here he had a furnace and apparatus, and the establishment being considered dangerous, objection was made to its further continuance and he therefore ceased the method of illumination.

The use of gas lights in Masonic Temple was made a close by the burning of that building in 1819. When the hall was rebuilt in 1822, new gas works were erected and permission asked to extend pipes on streets to supply other customers, but that privilege was refused by councils and predictions were made that gas as an illuminant would soon go out of use.

In 1825 an effort was made to induce the legislature to incorporate the Philadelphia Gas company, with authority to manufacture gas and lay pipes in the streets. Councils were aroused and the proposition opposed. A writer in the United States Gazette denounced the project of lighting by gas to be "foolish, unsafe, unsure, a trouble and a nuisance."

"From this time until 1831 various efforts were made to enlist the interest of the public and in 1832 a committee of councils was appointed to investigate the report which they did in the following year, with an estimate of the cost of gas for public lighting at \$3.50 per thousand feet, exclusive of interest and salaries. In the city of New York at that time gas was sold to citizens at \$7.00 per 1,000.

"Finally, in extreme prudence, councils adopted the resolution that a person of scientific knowledge should be sent to Europe to examine into the methods of manufacturing gas there, and Samuel V. Merrick was intrusted with the duty, returning in December 1834, with a very favorable report.

"In March 1835, councils passed an ordinance appropriating \$100,000 to construct works of \$75,000 cubic feet daily capacity on the site of the old Ninth Ward gas works, which were finished and put into operation, February 4, 1836. Up to that time there had been only 15 apparatuses for private service. The price fixed was \$2.50 per thousand.

"Since that period, what strides have been made, gas for lighting purposes has become almost as antiquated as tallow candles, and is now mostly used for heating purposes, especially for dwellings, but electricity is even supplanting that and between electricity and mineral oils in its various forms, it has made rapid changes in power, lights and heat. What additional changes there will be in the next few years it is difficult to portend. Not only the use of gas but it may be that the use of coal will become a heat and light generating power of the past."

### Another Rich Strike

A reported rich strike of gold ore is said to have been made in the Bradshaw by John Revelle, on the east side of Sand Creek, near Humber Creek about five miles south of the old Tiger mine. The claims are called the Monte Carlo and it is said the ore runs from \$100 to \$200 per pound.

### Iron Gas

At this property near Globe reports are being made to the holders and machinery and the main shaft and workings gotten in shape preparatory to the resumption of ore production if the present price of copper continues.

### Manganese Supplies Curtailed by the War

Among the important industries that have been affected by the war in Europe is the production of manganese ore and alloys. The ores are used in the manufacture of glass and dry batteries, and the alloys are essential in the manufacture of steel. In 1912 the United States received from Russia and India about three-fourths of the manganese ore required for domestic use and imported from England and Germany about half the amount of ferro-manganese needed by the steel industry. Dr. F. Jewett, of the United States Geological Survey, who has examined the figures showing the imports of these materials for the first nine months of 1914, states that the receipts of manganese ore have been 42,550 tons, or 16 per cent less than those of ferro-manganese 27,420 tons, or 37 per cent less than for the corresponding period in 1913. As the Russian ore is shipped from the ports of Pott and Butum on the Black Sea, through the Bosphorus, the entrance of Turkey into the war in October and the consequent closing of the straits to English ships will greatly curtail if not completely stop the export of all Russian ore. It seems probable, therefore, that the receipts of ore during the last three months of 1914 were much less than for the corresponding period in 1913. The imports of ore for the entire year of 1914 were probably at least 25 per cent less than for the preceding year.

The rise in prices of ore and ferro-manganese reflects the decline in imports. According to the schedule published by the Carnegie Steel Co., this rise ranges from 80 cents to \$1 a ton, according to the grade. The price for standard 50 per cent ferro-manganese was almost constant at \$40 a ton until August. During the few weeks of confusion following the outbreak of the war extraordinary prices reaching high as \$140 a ton were quoted, though it is probable that little was sold at prices above \$100 a ton. From August there was a steady decline to \$62 a ton until November, and recently the price has risen to \$80 a ton. The price of manganese has shown similar variations but to a less degree, ranging from a minimum of \$22 in May to \$26 a ton at present.

The effect of this shortage of ore in the United States and the consequent rise in prices has been to stimulate interest in domestic manganese deposits and to cause vigorous development of producing mines. Although several mines previously idle

have been reopened, no important new sources appear to have been found. Estimates of production from a few mines only are available, but it is doubtful if the total production of ore for 1914 greatly exceeded if it even equaled that for 1913, which was 4,018 tons. An interesting consequence of the shortage of ferro-manganese has been the attempt to establish new reduction plants to use sources heretofore not available. The Noble Electric Steel Co., having access to cheap electric power at Heroult, Cal., is attempting to establish the industry, using ores from Mendocino County. In the east the success of the attempt to make a low grade ferro-manganese from manganese iron ores from the Cuyuna range, Minnesota, by the American Manganese Co., at Dunbar, Pa., remains to be established.

The disturbances of the war will make necessary a number of adjustments in the foreign industries using manganese. The English steel industry depends largely on ferro-manganese made from Indian and Russian ores, and the supply from India will probably be assured even if the Suez canal were to fall into the hands of Turkey. Germany, however, with only scanty domestic ore resources, has been importing increasing amounts of ore from the Caucasus in Russia, and large investments of German capital have recently been made in this district. Unless there has been extraordinary foresight in assuring a supply, the continuance of the war for a year or more will make the shortage of manganese ore keenly felt in the German steel industry.

### OCCURRENCE OF FULLER'S EARTH IN THE UNITED STATES

Fuller's earth is found in quantity in Georgia, Florida, South Carolina, Alabama, Arkansas, California, and Texas; and deposits have been reported from Colorado, South Dakota, New York, and Massachusetts. With the exception of the fuller's earth found in Arkansas, all of the deposits are of sedimentary origin. The Massachusetts deposit is a glacial silt known to be so classified. The Arkansas deposit is unique, in that it is found in place in regular veins and according to Miser has been derived from basaltic dikes.

With the exception of the Arkansas deposits, all known American deposits of fuller's earth occur under much the same conditions as any other which must be removed before the fuller's earth can be mined. Usually a bed is distinctly stratified and very thin layers of sand separate the layers of earth which may be several inches thick. The geology of the Florida earths has been described by Vaughan and others. The geology of the South Carolina deposits is mentioned by Sloan and that of the Georgia deposits by Venable, but the Georgia and South Carolina deposits have never been fully mapped or described. The geology of the Arkansas deposits is discussed by Miser, and that of the Texas deposits by Duessner and the deposits at Lawrence, Mass., are described by Alden.

The Florida deposits are mainly in Gadsden County, near Quincy; the southern Georgia deposits are across the state line from Quincy; other Florida deposits are at Ellenton, in Manatee county on the west coast of southern Florida. Though the Florida deposits are much like any other in mode of occurrence, they are used almost wholly on mineral oils and are distinctly different from the fuller's earths of central Georgia and South Carolina. The deposits in southern Florida lie below the level of the sea and are within a few hundred feet of the shore, whereas those in northwestern Florida, except such as are in the bed of some stream, are high lying and are easily drained. The deposits of central Georgia are in a different geological formation from those of Florida, and the largest and best deposits are on

(Continued on Page Twelve)

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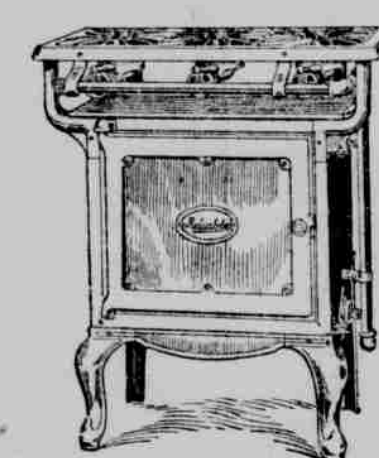
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